

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a proposed 0.58 MGD wastewater treatment plant with an expansion design flow tier of 0.96 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Haymount Wastewater Treatment Plant
22121 Ware Creek Road
Rappahannock Academy, VA
22538
SIC Code : 4952 WWTP
Facility Location: Route 614, Ware Creek Road
Rappahannock Academy, VA
County: Caroline
Facility Contact Name: John Clark
Telephone Number: 703-217-7171
Email Address: followaurora@yahoo.com
2. Permit No.: VA0089125
Expiration Date of previous permit: May 2, 2011
Other VPDES Permits associated with this facility: VAN020030
Other Permits associated with this facility: None
E2/E3/E4 Status: NA
3. Owner Name: Haymount (Fredericksburg) ASLI LLLP
Owner Contact/Title: John Clark, Agent
Telephone Number: 703-217-7171
4. Application Complete Date: April 1, 2011
Permit Drafted By: Joan C. Crowther
Date Drafted: September 8, 2011
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: September 14, 2011
WPM Review By: Bryant Thomas
Date Reviewed: October 7, 2011
Public Comment Period : Start Date: December 12, 2011
End Date: January 12, 2011
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination.
Receiving Stream Name : Rappahannock River, UT
Stream Code: XGW
Drainage Area at Outfall: 0.035 sq.mi.
River Mile: 000.36
Stream Basin: Rappahannock River
Subbasin: None
Section: 2
Stream Class: III
Special Standards: None
Waterbody ID: VAN-E21R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
30Q10 Low Flow: 0.0 MGD
30Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD

303(d) Listed: Receiving Stream - No

TMDL Approved: Receiving Stream - NA Date TMDL Approved: NA

303(d) Listed: Downstream – Yes (Bacteria and PCBs)

TMDL Approved: Downstream - Yes Date BacteriaTMDL Approved: May 5, 2008

TMDL Approved: Downstream – Yes Date PCBs TMDL Approved: NA (Due by 2016)

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: Class I

8. Reliability Class: Class I

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The proposed Town of Haymount will be a large mixed residential and commercial development to include schools and recreation facilities located on approximately 1,800 acres. The wastewater treatment facility has not been built. Current plans are for the 0.58 MGD facility to be built with a future expansion to 0.96 MGD.

The proposed system will be a privately owned wastewater treatment facility that will treat domestic and commercial wastewaters from approximately 4,000 homes and various businesses. At this time, the proposed treatment system will consist of screening and grit removal followed by dual Sequencing Batch Reactors (SBR) with activated sludge. Following clarification, decant water will flow to an equalization basin/surge tank and then to the denitrification filters. Following filtration and denitrification, effluent will be disinfected via ultraviolet light and post aeration will be performed prior to discharging treated effluent to an unnamed tributary to the Rappahannock River. Following initial start-up and performance testing, operations will be transferred over to Caroline County.

See Attachment 2 for a facility schematic/diagram.

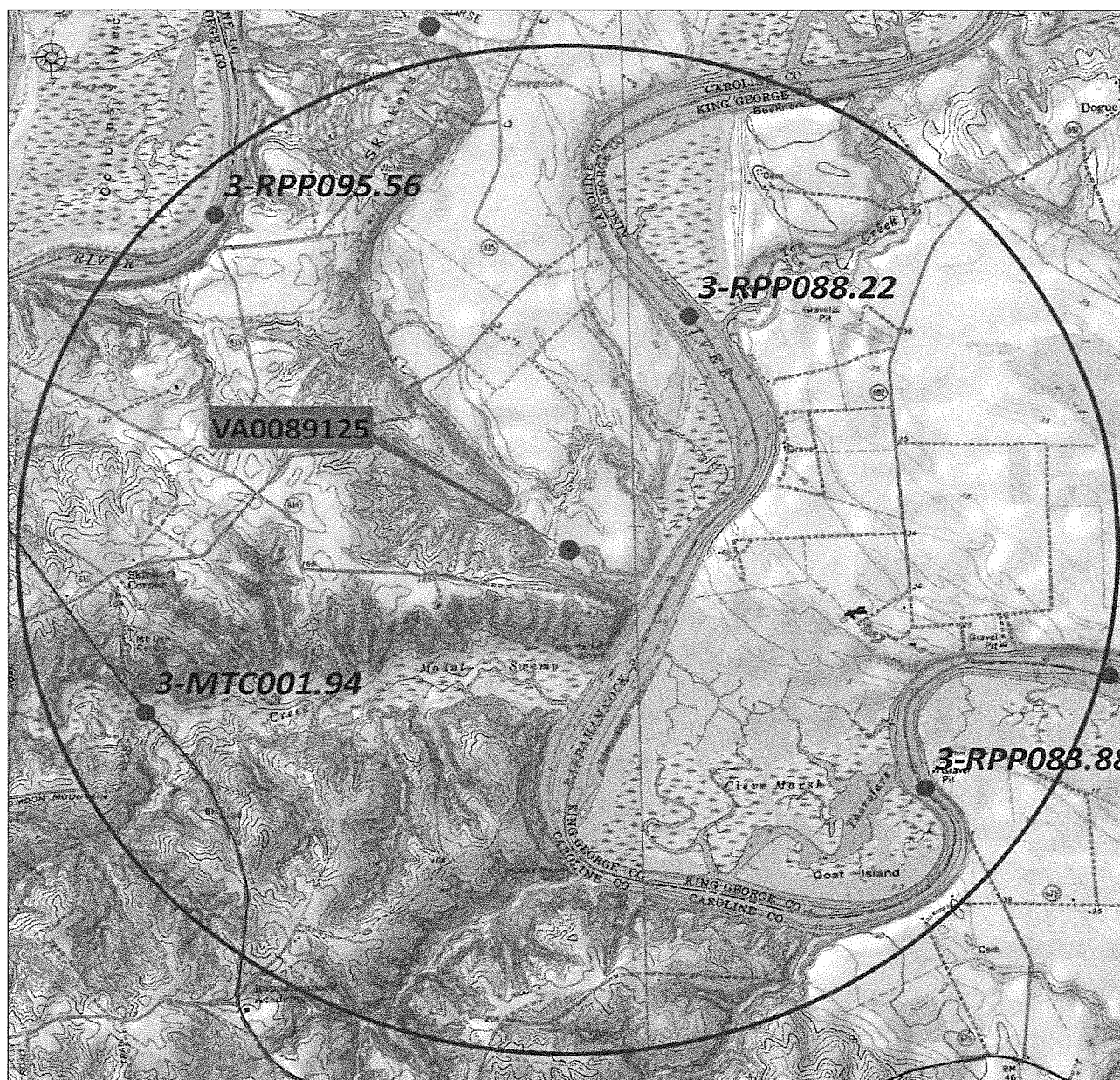
TABLE 1 – Outfall Description				
Outfall Number	Discharge Sources	Treatment	Design Flows	Outfall Latitude and Longitude
001	Domestic and/or Commercial Wastewater	See Item 10 above.	0.58 MGD 0.96 MGD	38° 12' 26" N 77° 15' 15" W

11. Sludge Treatment and Disposal Methods:

Sludge stabilization will be accomplished via aerobic digestion. Following aerobic digestion, sludge will be dewatered via centrifuge and sent to the BFI Old Dominion Sanitary Landfill in Henrico County for disposal. Future treatment components are proposed for sludge thickening and composting prior to disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

169 A - Rappahannock Academy and 168 B - Port Royal



Legend

- VPDES Permits
- DEQ Monitoring Stations
- County Boundaries

There are no other VPDES permitted facilities within a two mile radius and no drinking water intakes within a five mile radius of the permitted facility.

There are four DEQ ambient water quality monitoring stations located within a two mile radius of the permitted facility. They are 3-RPP095.56 (Rappahannock River); 3-RPP088.22 (Rappahannock River); 3-RPP083.88 (Rappahannock River); and 3-MTC001.94 (Mount Creek). 3-RPP095.56 and 3-RPP088.22 are upstream from the confluences of the facility's unnamed tributary to Rappahannock River and the Rappahannock River.

13. **Material Storage:** The facility has not been built yet so there is not material storage on site.
14. **Site Inspection:** The facility has not been built so no site inspection was made for this permit reissuance.
15. **Receiving Stream Water Quality and Water Quality Standards:**

a) Ambient Water Quality Data

The receiving stream for this facility (Unnamed Tributary to the Rappahannock River – XGW) discharges to a tidal segment of the Rappahannock River. Thus, a monitoring summary will be provided for the closest upstream and downstream monitoring stations on the tidal Rappahannock River.

Upstream DEQ Monitoring Station

The nearest upstream DEQ monitoring station on the Rappahannock River with ambient water quality data is Station 3-RPP088.22, located near the confluence of the Rappahannock River with Jones Top Creek. Station 3-RPP088.22 is located approximately 1.2 rivermiles upstream from where the receiving stream (3-XGW) enters the Rappahannock River. The following is a monitoring summary for this river segment, as taken from 2010 Integrated Assessment:

Class II, Section 1, special standards a.

DEQ Chesapeake Bay and ambient stations 3-RPP088.22, located near the confluence with Jones Top Creek; 3-RPP091.55 at Buoy 89; and 3-RPP095.56, located approximately 500 yards upstream from the Four Winds Campground boat ramp. Fish consumption use assessed using DEQ fish tissue/sediment station 3-RPP080.19, located in a downstream segment.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory and sufficient excursions above the fish tissue value (TV) for PCBs in fish tissue. Additionally, excursions above the risk-based tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue was recorded in one specie of fish (1 total samples) collected in 2006 at monitoring station 3-RPP080.19 (channel catfish), noted by an observed effect.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for this portion of the Rappahannock River was approved by EPA on 05/05/2008.

The wildlife use is considered fully supporting. The shellfishing use was not assessed.

The aquatic life use is listed as Category 3B because sufficient data are not available to show that all aquatic life sub-uses are being met.

Downstream DEQ Monitoring Station

The nearest downstream DEQ monitoring station on the Rappahannock River with ambient water quality data is Station 3-RPP083.88, located near Goat Marsh. Station 3-RPP083.88 is located approximately 2.9 rivermiles upstream from where the receiving stream (3-XGW) enters the Rappahannock River. The following is a monitoring summary for this river segment, as taken from 2010 Integrated Assessment:

Class II, Section 1, special standards a.

DEQ Chesapeake Bay, ambient, and fish tissue/sediment monitoring station 3-RPP080.19, at Route 301,

and DEQ Chesapeake Bay, ambient stations 3RPP082.80, located near Buoy 79, and E-RPP083.88, located near Goat Marsh. Chesapeake Bay probabilistic stations 08R28, 09R25, 11R24, and 11R25. Citizen monitoring station 3RPP-4-ALL.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory and sufficient excursions above the fish tissue value (TV) for PCBs in fish tissue. Additionally, excursions above the risk-based tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue was recorded in one specie of fish (1 total samples) collected in 2006 at monitoring station 3-RPP080.19 (channel catfish), noted by an observed effect.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for this portion of the Rappahannock River was approved by EPA on 05/05/2008.

The aquatic life use is listed as Category 3B because sufficient data are not available to show that all aquatic life sub-uses are being met. The wildlife and shellfishing uses were not assessed.

The full planning statement dated July 5, 2011, is found in Attachment 3.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories (wastewater, urban storm water, onsite/septic agriculture, air deposition). Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Rappahannock River, is located within Section 2 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The Freshwater Water Quality Criteria/Wasteload Allocation Analysis dated June 22, 2011, (Attachment 4) details other water quality criteria applicable to the receiving stream.

Ammonia:

Ambient water quality data for the stream are not available. The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. The default temperature value of 25°C and pH value of 8.0 S.U. were used to calculate the ammonia water quality standards because no stream or effluent data is available.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). There is no hardness data for this facility or for the receiving stream. Staff

guidance suggests using a default hardness value of 50 mg/L CaCO₃ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 4 are based on this default value.

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170 A state that the following criteria shall apply to protect primary recreational uses in surface waters:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126; for a minimum of four weekly samples taken during any calendar month.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Rappahannock River, UT, is located within Section 2 of the Rappahannock River Basin. There are no designated special standards for this Section.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on June 22, 2011, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The *Haliaeetus leucocephalus* (Bald Eagle) was identified within a 2 mile radius of the discharge. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge. See Attachment 5 for complete database query results.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on an evaluation of the critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier I since the limits are set to meet the WQS. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day

average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Since the facility has not been built, there is no effluent data to review.

Since the facility will be treating domestic sewage, it can be assumed that the following pollutants require a wasteload allocation analysis: Ammonia as N. Total Residual Chlorine was not considered since the facility will be disinfecting with UltraViolet disinfection.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	= Wasteload allocation
C_o	= In-stream water quality criteria
Q_e	= Design flow
Q_s	= Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	= Decimal fraction of critical flow
C_s	= Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o .

c) Effluent Limitations - Toxic Pollutants, Outfall 001

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

Because there is no stream or effluent data available, the default pH (8.0 S.U.) and temperature (25°C) values were used to derive ammonia criteria. The ammonia water quality criteria, new wasteload allocations (WLAs) and new computed ammonia limits can be found in Attachment 6. DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage. The ammonia limits for both the flow tiers are monthly average concentration of 1.4 mg/L and weekly average concentration of 1.8 mg/L.

In lieu of the ammonia limitations, the facility will be given a year round TKN limit of 3.0 mg/L. Ammonia monthly average concentration of 1.4 mg/L and weekly average concentration of 1.8 mg/L were derived by calculations in Attachment 6 but a TKN monthly average concentration of 3.0 mg/L assumes that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized and that ammonia is removed when the 3.0 mg/L TKN limit is met. Therefore, an ammonia effluent limitation will not be necessary. The TKN weekly average limit will be 4.5 mg/L based on a multiplier of 1.5 times the monthly average.

2) Metals/Organics:

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), carbonaceous biochemical oxygen demand-5 day (cBOD₅), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed.

The cBOD₅, TSS, Dissolved Oxygen, and TKN effluent limitations determination was based on a site inspection performed by Amy Taylor and Tom Faha on May 26, 2005. They made the following observations:

- 1) The site and surrounding area is moderately wooded with large areas of open fields and farmland. The unnamed tributary to the Rappahannock River at the location of the proposed discharge appeared to be a large stormwater drainage swale/ravine with well defined banks, large rocks, and a fairly steep slope.
- 2) Flow in the stream was minimal and observations made at the time of inspection suggested that the stream only receives flow from stormwater runoff during rain events or period of wet weather.
- 3) The stream flows for approximately 300 – 500 feet before draining into a swampy-marsh area along the shore of the Rappahannock River.

Therefore, cBOD₅, TSS, Dissolved Oxygen, and TKN limitations are based on best professional judgement and Guidance Memo 00-2011. This guidance is applicable to waters such as this portion of unnamed tributary of the Rappahannock River where the water is shallow, flow is intermittent, and the waters cannot be modeled.

It is staff's practice to equate the Total Suspended Solids limits with the cBOD₅ limits. TSS limits are established to equal cBOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only annual concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN020030. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥ 0.5 MGD above the fall line and ≥ 0.1 MGD below the fall line.

Monitoring for Nitrates + Nitrites, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820. Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual averages are based on 9VAC25-40 and GM07-2008.

Total Nitrogen (TN) and Total Phosphorus (TP) annual concentration averages at the 0.96 MGD flow tier were calculated using a permitted design capacity based on the existing 0.58 MGD flow. Permitted design capacity means the allowable load (pounds per year (lbs/yr)) assigned to an existing facility that has a wasteload allocation listed in the Water Quality Management Plan regulation (9VAC25-720). This facility does have a wasteload allocation listed in the Water Quality Management Plan for the 0.58 MGD design flow. The Total Nitrogen PDC is 7,066 lb/yr and Total Phosphorus PDC is 530 lbs/yr. These poundages are associated with an annual concentration of 4.0 mg/L for TN and 0.30 mg/L for TP.

The following calculation was used to determine the permitted design capacity (PDC) for the Haymount WWTP at the 0.58 MGD:

$$\text{Total Nitrogen PDC} = \text{Existing Flow} \times \text{TN Concentration (mg/L)} \times 365 \text{ days per year} \times 8.3438 \text{ (conversion factor)}$$

$$\text{Total Phosphorus PDC} = \text{Existing Flow} \times \text{TP Concentration (mg/L)} \times 365 \text{ days per year} \times 8.3438 \text{ (conversion factor)}$$

$$\begin{aligned} \text{Total Nitrogen PDC} &= 0.58 \text{ MGD} \times 4.0 \text{ mg/L} \times 365 \times 8.3438 \\ &= 7066 \text{ lbs/year} \end{aligned}$$

$$\begin{aligned} \text{Total Phosphorus PDC} &= 0.58 \text{ MGD} \times 0.30 \text{ mg/L} \times 365 \times 8.3438 \\ &= 530 \text{ lbs/year} \end{aligned}$$

The Total Nitrogen and Total Phosphorus annual averages for the 0.96MGD flow tier are then calculated using the following calculation:

$$\text{Annual Concentration Average} = \text{Permitted Design Capacity} \div 365 \text{ days per year} \div 8.3438 \text{ (conversion factor)} \div 0.98 \text{ MGD}$$

$$\begin{aligned} \text{Total Nitrogen Annual Concentration Average} &= 7066 \text{ pounds per year} \div 365 \text{ days per year} \div 8.3438 \div 0.96 \text{ MGD} \\ &= 2.4 \text{ mg/L}^* \end{aligned}$$

$$\begin{aligned} \text{Total Phosphorus Annual Concentration Average} &= 530 \text{ pounds per year} \div 365 \text{ days per year} \div 8.3438 \div 0.96 \text{ MGD} \\ &= 0.18 \text{ mg/L} \end{aligned}$$

*It should be noted that the lowest TN annual concentration average required by DEQ at this time is 3.0 mg/L. Therefore, the TN annual concentration average for Haymount WWTP is 3.0 mg/L.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, cBOD₅, Total Suspended Solids, TKN, pH, Dissolved Oxygen, Total Nitrogen and Total Phosphorus.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual and the Guidance Memo No. 07-2008, Permitting Considerations for Facilities in the Chesapeake Bay Watershed.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

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19. Effluent Limitations/Monitoring Requirements:

A. Design flow is 0.58 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting the issuance of the CTO for the 0.96 MGD facility or until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	Continuous	TIRE
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
cBOD ₅	2	10 mg/L	22 kg/day	15 mg/L	33 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L	22 kg/day	15 mg/L	33 kg/day	NA	NA	3D/W	8H-C
DO	3	NA		NA		6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	2	3.0 mg/L	6.6 kg/day	4.5 mg/L	9.9 kg/day	NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls		NA		NA	NA	3D/W	Grab
Nitrate+Nitrite, as N	3, 4	NL mg/L		NA		NA	NA	2/M	8H-C
Total Nitrogen ^a	3, 4	NL mg/L		NA		NA	NA	2/M	Calculated
Total Nitrogen – Year to Date ^b	3, 4	NL mg/L		NA		NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 4	4.0 mg/L		NA		NA	NA	1/YR	Calculated
Total Phosphorus	3, 4	NL mg/L		NA		NA	NA	2/M	8H-C
Total Phosphorus – Year to Date ^b	3, 4	NL mg/L		NA		NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 4	0.30 mg/L		NA		NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Federal Effluent Requirements

MGD = Million gallons per day.

1/D = Once every day.

2. Best Professional Judgement

NA = Not applicable.

3D/W = Three days a week.

3. Water Quality Standards

NL = No limit; monitor and report.

2/M = Twice a month, at least 7 days apart.

4. 9VAC25-40 (Nutrient Regulation)

S.U. = Standard Units.

1/M = Once every month.

TIRE = Totalizing, indicating and recording equipment.

1/YR = Once per year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements (continued):

B. Design flow is 0.96 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 0.96 MGD facility and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	Continuous	TIRE
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
cBOD ₅	2	10 mg/L	36 kg/day	15 mg/L	55 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L	36 kg/day	15 mg/L	55 kg/day	NA	NA	3D/W	8H-C
DO	3	NA		NA		6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	2	3.0 mg/L	11 kg/day	4.5 mg/L	16 kg/day	NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls		NA		NA	NA	3D/W	8H-C
Nitrate+Nitrite, as N	3, 4	NL mg/L		NA		NA	NA	1/2M	8H-C
Total Nitrogen ^a	3, 4	NL mg/L		NA		NA	NA	1/2M	Calculated
Total Nitrogen – Year to Date ^b	3, 4	NL mg/L		NA		NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 4	3.0 mg/L		NA		NA	NA	1/YR	Calculated
Total Phosphorus	3, 4	NL mg/L		NA		NA	NA	1/2M	8H-C
Total Phosphorus – Year to Date ^b	3, 4	NL mg/L		NA		NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 4	0.18 mg/L		NA		NA	NA	1/YR	Calculated

The basis for the limitations codes are:

- | | | |
|------------------------------------|---|--|
| 1. Federal Effluent Requirements | <i>MGD</i> = Million gallons per day. | <i>1/D</i> = Once every day. |
| 2. Best Professional Judgement | <i>NA</i> = Not applicable. | <i>3D/W</i> = Three days a week. |
| 3. Water Quality Standards | <i>NL</i> = No limit; monitor and report. | <i>2/M</i> = Twice a month, at least 7 days apart. |
| 4. 9VAC25-40 (Nutrient Regulation) | <i>S.U.</i> = Standard Units. | <i>1/M</i> = Once every month. |
| | <i>TIRE</i> = Totalizing, indicating and recording equipment. | <i>1/YR</i> = Once per year. |

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the Nutrient Calculations.

20. Other Permit Requirements:

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

21. Other Special Conditions:

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The manual shall be submitted to the DEQ Regional Office for approval within 90 days of issuance of Certificate to Operate. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class I operator.
- e) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I.
- f) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- g) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- h) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- i) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

- j) Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.
- k) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- l) Discharge Monitoring Report Submittal. This Special Condition delays the submittal of Discharge Monitoring Reports until such time that a Certificate to Operate the facility has been issued. It also requires the permittee to enroll into the DEQ's electronic Discharge Monitoring Report (e-DMR) system at the time of submittal for the Certificate To Operate.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1) Included Nutrient Offset Special Condition in accordance with guidance because Haymount WWTP is listed in the WQMP regulation and has requested a flow that is greater than the flow used to calculate the WQMP loadings.
 - 2) Included E3/E4 Special Condition in accordance with guidance that states to include with any permit that has a Total Nitrogen or Total Phosphorus annual average concentration limit.
 - 3) The Nutrient Reporting Calculations Special Condition was deleted. This information has been moved to Part I.B.2 of the permit.
- b) Monitoring and Effluent Limitations:
 - 1) Removed the effluent monitoring requirement for Orthophosphate as it required in the General Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

24. Variances/Alternate Limits or Conditions:

There are no variances /alternate limits or conditions associated with this permit.

25. Public Notice Information:

First Public Notice Date: December 12, 2011 Second Public Notice Date: December 19, 2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 7 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer

and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

TMDL Reopener: This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

This facility discharges directly to unnamed tributary to the Rappahannock River. The Rappahannock River stream segment receiving the effluent is listed for non attainment of recreational use (*E.coli* bacteria) in part I of the approved 2010 303(d) list. EPA approved the Tidal Freshwater Rappahannock River Bacteria TMDL on May 5, 2008. The TMDL contains a WLA for this discharge of 1.67+12cfu/year of *E. coli* bacteria. This permit has *E. coli* bacteria limit of 126 n/cmL that is in compliance with the TMDL.

This facility is located within the Tidal Freshwater Rappahannock River watershed, which has a PCB impairment (TMDL due by 2016). According to the PCB Point Source Monitoring Guidance (TMDL Guidance Memo No. 09-2001), this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. However, since Haymount WWTP serves a new, residential community, the Assessment/TMDL Staff has concluded that low-level PCB monitoring is not warranted for this facility.

27. Additional Comments:

Previous Board Action(s): None

Staff Comments: The permit reissuance delay was due to staff workload.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 8.

VA0089125 Haymount Wastewater Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination Memo dated March 3, 2006
2	Facility Schematic/Diagram
3	Planning Statement for Haymount WWTP, dated September 19, 2011
4	Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated September 2, 2011
5	DGIF Threatened and Endangered Species Database Search dated June 22, 2011
6	Ammonia Effluent Calculation Results
7	Public Notice
8	EPA Checklist dated September 8, 2011

March 3, 2006
MEMORANDUM

TO: Permit File

FROM: Amy G. Taylor, DEQ-NVRO Water Permits

SUBJECT: Flow Frequency Determination
Haymount WWTF – VA0089125

The proposed Haymount WWTF will discharge to an unnamed tributary to the Rappahannock River in Caroline County, Virginia. Flow frequencies are routinely used by the permit writer to aid in developing the VPDES permit.

As the receiving stream at the proposed point of discharge has a very small drainage area ($< 5 \text{ mi}^2$) and does not appear on a U.S.G.S. topographic map, it is staff's belief that the stream is not perennial. Other observations also indicated that the receiving stream is seasonal and has little to no flow throughout most of the year except during or after periods of rainfall.

Based on this information and comparison with similar receiving streams, it is staff's best professional judgment that ephemeral/seasonal streams such as this have a 7Q10 of 0.0 MGD.

This 7Q10 flow value will be used in developing a water body tier classification, applicable water quality criteria, and Waste Load Allocations (WLA) necessary for the VPDES permit.

To: Joan C. Crowther
From: Katie Conaway, Jennifer Carlson

Date: September 19, 2011
Subject: Planning Statement for Haymount Wastewater Treatment Plant
Permit Number: VA0089125

Discharge Type: Municipal
Discharge Flow: Tiered 0.58 and 0.96 MGD
Receiving Stream: Rappahannock River, UT
Latitude / Longitude: 38° 12' 26" -77° 15' 15"
Streamcode: 3-XGW
Waterbody: VAN-E21R
Water Quality Standards: Class III, Section 4.
Rivermile: 000.36

1. Is there monitoring data for the receiving stream?

No.

- If yes, please attach latest summary.
- If no, where is the nearest downstream monitoring station.

The receiving stream for this facility (Unnamed Tributary to the Rappahannock River – XGW) discharges to a tidal segment of the Rappahannock River. Thus, a monitoring summary will be provided for the closest upstream and downstream monitoring stations on the tidal Rappahannock River.

The nearest upstream DEQ monitoring station on the Rappahannock River with ambient water quality data is Station 3-RPP088.22, located near the confluence of the Rappahannock River with Jones Top Creek. Station 3-RPP088.22 is located approximately 1.2 rivermiles upstream from where the receiving stream (3-XGW) enters the Rappahannock River. The following is a monitoring summary for this station, as taken from 2010 Integrated Assessment:

Class II, Section 1, special stds. a.

DEQ Chesapeake Bay and ambient stations 3-RPP088.22, located near the confluence with Jones Top Creek; 3-RPP091.55 at Buoy 89; and 3-RPP095.56, located approximately 500 yards upstream from the Four Winds Campground boat ramp. Fish consumption use assessed using DEQ fish tissue/sediment station 3-RPP080.19, located in a downstream segment.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory and sufficient excursions above the fish tissue value (TV) for PCBs in fish tissue. Additionally, excursions above the risk-based tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue was

recorded in one specie of fish (1 total samples) collected in 2006 at monitoring station 3-RPP080.19 (channel catfish), noted by an observed effect.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for this portion of the Rappahannock River was approved by EPA on 05/05/2008.

The wildlife use is considered fully supporting. The shellfishing use was not assessed.

The aquatic life use is listed as Category 3B because sufficient data are not available to show that all aquatic life sub-uses are being met.

The nearest downstream DEQ monitoring station on the Rappahannock River with ambient water quality data is Station 3-RPP083.88, located near Goat Marsh. Station 3-RPP083.88 is located approximately 2.9 rivermiles upstream from where the receiving stream (3-XGW) enters the Rappahannock River. The following is a monitoring summary for this station, as taken from 2010 Integrated Assessment:

Class II, Section 1, special stds. a.

DEQ Chesapeake Bay, ambient, and fish tissue/sediment monitoring station 3-RPP080.19, at Route 301, and DEQ Chesapeake Bay, ambient stations 3RPP082.80, located near Buoy 79, and E-RPP083.88, located near Goat Marsh. Chesapeake Bay probabilistic stations 08R28, 09R25, 11R24, and 11R25. Citizen monitoring station 3RPP-4-ALL.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory and sufficient excursions above the fish tissue value (TV) for PCBs in fish tissue. Additionally, excursions above the risk-based tissue value (TV) of 300 parts per billion (ppb) for mercury (Hg) in fish tissue was recorded in one specie of fish (1 total samples) collected in 2006 at monitoring station 3-RPP080.19 (channel catfish), noted by an observed effect.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for this portion of the Rappahannock River was approved by EPA on 05/05/2008.

The aquatic life use is listed as Category 3B because sufficient data are not available to show that all aquatic life sub-uses are being met. The wildlife and shellfishing uses were not assessed.

2. Is the receiving stream on the current 303(d) list?

No.

- If yes, what is the impairment?

N/A

- Has the TMDL been prepared?

N/A

- If yes, what is the WLA for the discharge?

N/A

- If no, what is the schedule for the TMDL?

N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

Yes.

- If yes, what is the impairment?

There are several impairments on the tidal freshwater portion of the Rappahannock River. They are as follows:

Fish Consumption Use Impairment: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel, blue catfish, carp, channel catfish, croaker, gizzard shad, and anadromous (coastal) striped bass consumption to no more than two meals per month. The affected area extends from the I-95 bridge above Fredericksburg downstream to the mouth of the river near Stingray Point, including its tributaries Hazel Run up to the I-95 bridge crossing and Claiborne Run up to the Route 1 bridge crossing.

Excursions above the water quality criterion based tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in three species of fish (5 total samples) collected in 2006 at monitoring station 3-RPP080.19 (blue catfish, channel catfish, and gizzard shad). As a result, the waters were assessed as not supporting the fish consumption use.

Recreation Use Impairment: Sufficient excursions from the maximum *E. coli* bacteria criterion (9 of 59 samples - 15.3%) were recorded at DEQ's ambient water quality monitoring station (3-RPP091.55) at Buoy 89 to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment. The segment was previously listed for a fecal coliform bacteria impairment, from 2002 through 2004. The *E. coli* bacteria impairment was first listed in 2006.

- Has a TMDL been prepared?

Fish Consumption Use Impairment (PCBs) – No.

Recreation Use Impairment – Yes. Approved by EPA 5/5/2008.

- Will the TMDL include the receiving stream?

Neither TMDL did, or will, specifically include the receiving stream. However, all TMDLs are required to consider all upstream point source discharges.

- Is there a WLA for the discharge?

Yes – The Tidal Freshwater Rappahannock River Bacteria TMDL included a WLA allocation for this facility:

1.67E+12 cfu/year of E. coli bacteria

- What is the schedule for the TMDL?

Fish Consumption use TMDL for PCBs – Due by 2016.

Recreational Use TMDL – EPA Approved 5/5/2008.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

Note here if you need a drainage area done or a list of Individual or General Permits found within the waterbody.

- A. This facility is located within the Tidal Freshwater Rappahannock River watershed, which has a PCB impairment (TMDL due by 2016). According to PCB Point Source Monitoring Guidance (TMDL Guidance Memo No. 09-2001) this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. However, since Haymount WWTP serves a new, residential community, the Assessment/TMDL Staff has concluded that low-level PCB monitoring is not warranted for this facility.
- B. There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.
- C. The drainage area is 0.035 mi².

5. Fact Sheet Requirements – Please provide information on other VPDES permits or VADEQ monitoring stations located within a 2 mile radius of the facility. In addition, please provide information on any drinking water intakes located within a 5 mile radius of the facility.

There are several DEQ monitoring stations within a 2-mile radius of the facility. They are listed below and their locations can be found on the attached map:

3-RPP095.56 – Rappahannock River
3-RPP088.22 – Rappahannock River
3-RPP083.88 – Rappahannock River
3-MTC001.94 – Mount Creek

There are no VPDES individual permits located within a 2 mile radius of the facility and there are no drinking water intakes within a 5 mile radius of this facility.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Haymount Wastewater Treatment Plant Permit No.: VA0089125 Version: OWP Guidance Memo 00-2011 (8/24/00)

Receiving Stream: Rappahannock River, Ut

Attachment 4

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO ₃) =	mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO ₃) =	50 mg/L	
90% Temperature (Annual) =	deg C		7Q10 (Annual) =	0 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	25 deg C	
90% Temperature (Wet season) =	deg C		30Q10 (Annual) =	0 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =	SU		1Q10 (Wet season) =	0 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	8 SU	
10% Maximum pH =	SU		30Q10 (Wet season)	0 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		30Q5 =	0 MGD					Discharge Flow =	0.96 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	5	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	9.3E+00
Acrylonitrile ^c	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	2.5E+00
Aldrin ^c	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	3.0E+00	--	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	1.24E+00	na	--	8.41E+00	1.24E+00	na	--	--	--	--	--	8.41E+00	1.24E+00	na
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	2.43E+00	na	--	8.41E+00	2.43E+00	na	--	--	--	--	--	8.41E+00	2.43E+00	na
Anthrachene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	4.0E+04
Anilimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	3.4E+02	1.5E+02	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--
Benzene ^c	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	5.1E+02
Benzidine ^c	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	2.0E-03
Benzo (a) anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	1.8E-01
Benzo (b) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	1.8E-01
Benzo (k) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	1.8E-01
Benzo (a) pyrene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	1.8E-01
Bis(2-Chloroisopropyl) Ether ^c	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	5.3E+00
Bis(2-Chloroisopropyl) Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	6.5E+04
Bis 2-Ethylhexyl Phthalate ^c	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	2.2E+01
Bromoform ^c	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	1.4E+03
Bulkybenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	1.8E+00	6.6E-01	na
Carbon Tetrachloride ^c	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	1.6E+01
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	2.4E+00	4.3E-03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	8.6E+05	2.3E+05	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	1.9E+01	1.1E+01	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	1.6E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^c	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	--
DDD ^c	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE ^c	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dezinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine ^c	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane ^c	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^c	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene ^c	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin ^c	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene ^c	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine ^c	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^c	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^c	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene ^c	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Alpha-BHC ^c	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Gamma-BHC ^c (Lindane)	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hexachlorothane ^c	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Indeno (1,2,3-cd) pyrene ^c	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^c	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepon	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride ^c	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine ^c	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine ^c	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine ^c	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total ^c	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	--	na	6.4E-04
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^c	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene ^c	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane ^c	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene ^c	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol ^c	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^c	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	2.6E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1) effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.6E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.960 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MG)				0.960	
Stream Flows				Total Mix Flows	
Allocated to Mix (MGD)				Stream + Discharge (MGD)	
Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
1Q10	0.000	0.000	0.960	0.960	0.960
7Q10	0.000	N/A	0.960	N/A	N/A
30Q10	0.000	0.000	0.960	0.960	0.960
30Q5	0.000	N/A	0.960	N/A	N/A
Harm. Mean	0.000	N/A	0.960	N/A	N/A
Annual Avg.	0.000	N/A	0.960	N/A	N/A
Stream/Discharge Mix Values					
Dry Season			Wet Season		
1Q10 90th% Temp. Mix (deg C)	25.000		0.000		
30Q10 90th% Temp. Mix (deg C)	25.000		0.000		
1Q10 90th% pH Mix (SU)	8.000		8.000		
30Q10 90th% pH Mix (SU)	8.000		8.000		
1Q10 10th% pH Mix (SU)	0.000		N/A		
7Q10 10th% pH Mix (SU)	0.000		N/A		
Calculated			Formula Inputs		
1Q10 Hardness (mg/L as CaCO3)	50.0		50.0		
7Q10 Hardness (mg/L as CaCO3)	50.0		50.0		

Ammonia - Dry Season - Acute				Ammonia - Dry Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				8.000			
(pH - 7.204)				-0.796			
				0.796			
Trout Present Criterion (mg N/L)				5.615			
Trout Absent Criterion (mg N/L)				8.408			
Trout Present?				n			
Effective Criterion (mg N/L)				8.408			

Ammonia - Wet Season - Acute				Ammonia - Wet Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				8.000			
(pH - 7.204)				-0.796			
				0.796			
Trout Present Criterion (mg N/L)				5.615			
Trout Absent Criterion (mg N/L)				8.408			
Trout Present?				n			
Effective Criterion (mg N/L)				8.408			

Early LS Present Criterion (mg N)				2.434			
Early LS Absent Criterion (mg N)				3.952			
Early Life Stages Present?				Y			
Effective Criterion (mg N/L)				2.434			

0.960 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MG)				0.960	
100% Stream Flows		Total Mix Flows			
Allocated to Mix (MGD)		Stream + Discharge (MGD)			
Dry Season	Wet Season	Dry Season	Wet Season		
1Q10	0.000	0.960	0.960		
7Q10	0.000	0.960	N/A		
30Q10	0.000	0.960	0.960		
30Q5	0.000	0.960	N/A		
Harm. Mean	0.000	0.960	N/A		
Annual Avg.	0.000	0.960	N/A		
Stream/Discharge Mix Values					
Dry Season		Wet Season			
1Q10 90th% Temp. Mix (deg C)	25.000	0.000			
30Q10 90th% Temp. Mix (deg C)	25.000	0.000			
1Q10 90th% pH Mix (SU)	8.000	8.000			
30Q10 90th% pH Mix (SU)	8.000	8.000			
1Q10 10th% pH Mix (SU)	0.000	N/A			
7Q10 10th% pH Mix (SU)	0.000	N/A			
Calculated				Formula Inputs	
1Q10 Hardness (mg/L as CaCO3) =				50.000	
7Q10 Hardness (mg/L as CaCO3) =				50.000	

Ammonia - Dry Season - Acute				Ammonia - Dry Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				90th Percentile pH (SU)			
(pH - 7.204)				MIN			
				MAX			
Trout Present Criterion (mg N/L)				(7.688 - pH)			
Trout Absent Criterion (mg N/L)				(pH - 7.688)			
Trout Present?				n			
Effective Criterion (mg N/L)				8.408			
				Early LS Present Criterion (mg N)			
				Early LS Absent Criterion (mg N)			
				Early Life Stages Present?			
				Effective Criterion (mg N/L)			

Ammonia - Wet Season - Acute				Ammonia - Wet Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				90th Percentile pH (SU)			
(pH - 7.204)				MIN			
				MAX			
Trout Present Criterion (mg N/L)				(7.688 - pH)			
Trout Absent Criterion (mg N/L)				(pH - 7.688)			
Trout Present?				n			
Effective Criterion (mg N/L)				8.408			
				Early LS Present Criterion (mg N)			
				Early LS Absent Criterion (mg N)			
				Early Life Stages Present?			
				Effective Criterion (mg N/L)			

VaFWIS - Department of Game and Inland Fisheries

38,12,26.0 -77,15,15.0

is the Search Point

Submit

Cancel

Search Point

- ☒ Change to "clicked" map point
☐ Fixed at 38,12,26.0 - 77,15,15.0

Show Position Rings

- ☒ Yes ☐ No
 1 mile and 1/4 mile at the Search Point

Show Search Area

- ☒ Yes ☐ No
 2 Search distance miles radius

Search Point is at map center

Base Map Choices

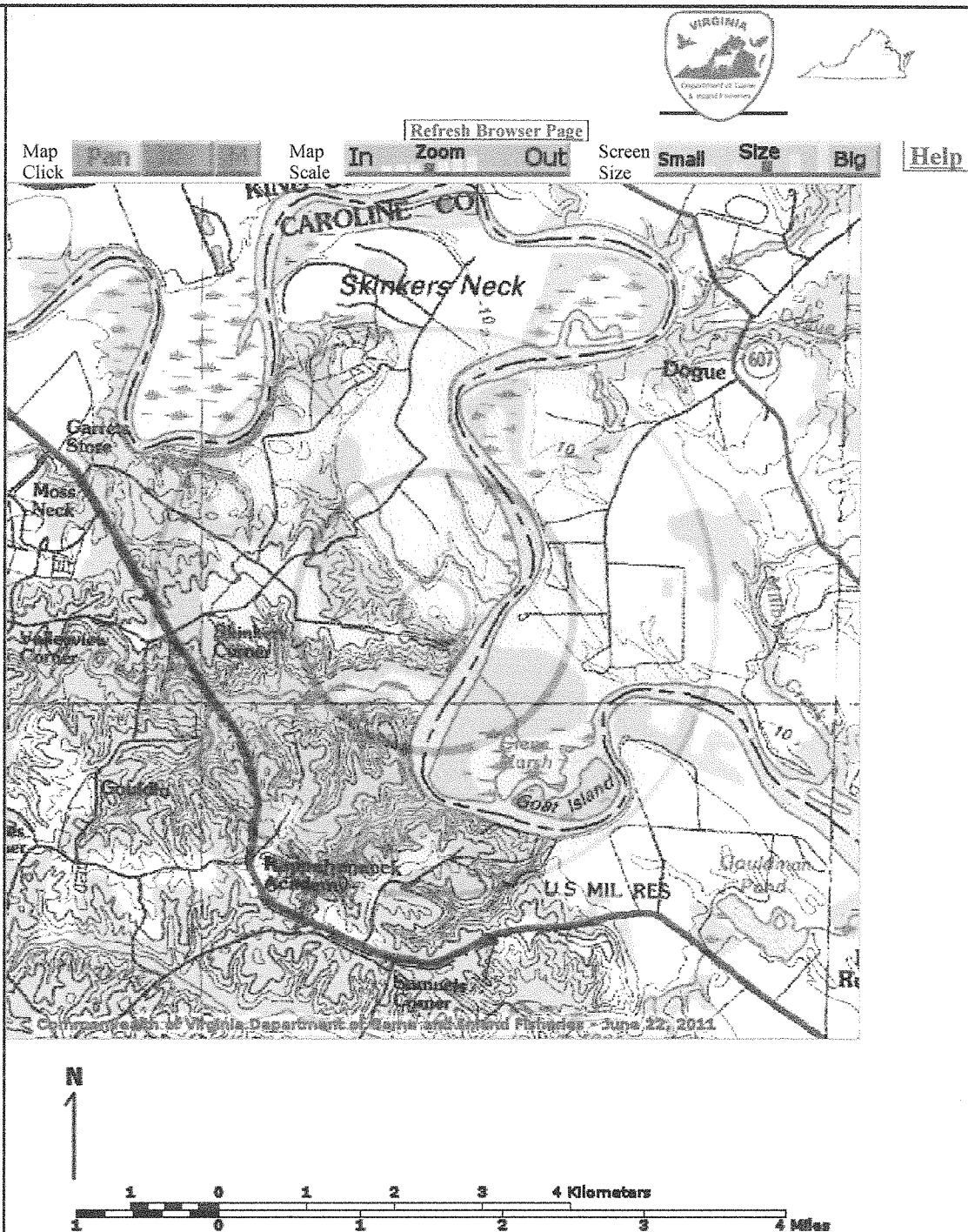
Topography

Map Overlay Choices

Current List: Position, Search

Map Overlay Legend

- ☒ Position Rings
 1 mile and 1/4 mile at the Search Point
☐ 2 mile radius Search Area



Point of Search 38,12,26.0 -77,15,15.0

Map Location 38,12,26.0 -77,15,15.0

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

- ☐ Decimal Degrees Latitude - Longitude
☐ Meters UTM NAD83 East North Zone
☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft.terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 297849 and top 4236022. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

Attachment 5

are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.national.geographic.com/topo>
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2011-06-22 13:15:34 (qa/qc June 20, 2011 10:04 - tn=345276 dist=32181)

| [DGIF](#) | [Credits](#) | [Disclaimer](#) | Contact shirl.dressler@dgif.virginia.gov | Please view our [privacy policy](#) |
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VaFWIS Initial Project Assessment Report Compiled on 6/22/2011, 1:31:51

PM

[Help](#)

Known or likely to occur within a 2 mile radius around point 38,12,25.9 -77,15,14.9
in 033 Caroline County, 099 King George County, VA

[View Map of
Site Location](#)

426 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 20) (16 species with Status* or Tier I** or Tier II**)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA
040385	ST	I	<u>Sparrow, Bachman's</u>	Aimophila aestivalis		BOVA,HU6
040093	FSST	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus	<u>Yes</u>	BOVA,BECAR,BAEANests,HU6,Habitat
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA,HU6
010077		I	<u>Shiner, bridle</u>	Notropis bifrenatus		BOVA
040225		I	<u>Sapsucker, yellow- bellied</u>	Sphyrapicus varius		BOVA
040319		I	<u>Warbler, black- throated green</u>	Dendroica virens		BOVA
010032		II	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
040052		II	<u>Duck, American black</u>	Anas rubripes		BOVA,HU6
040029		II	<u>Heron, little blue</u>	Egretta caerulea caerulea		BOVA
040105		II	<u>Rail, king</u>	Rallus elegans		BOVA,HU6,Habitat
040187		II	<u>Tern, royal</u>	Sterna maxima maximus		BOVA
040320		II	<u>Warbler, cerulean</u>	Dendroica cerulea		BOVA,HU6
040266		II	<u>Wren, winter</u>	Troglodytes troglodytes		BOVA
020005		III	<u>Frog, carpenter</u>	Lithobates virgatipes		BOVA,HU6

020082		III	<u>Siren, eastern lesser</u>	Siren intermedia intermedia		BOVA,HU6
030068		III	<u>Turtle, eastern box</u>	Terrapene carolina carolina	<u>Yes</u>	BOVA,SppObs,HU6
040037		III	<u>Bittern, least</u>	Ixobrychus exilis exilis		BOVA

To view **All 426 species** [View 426](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern (obsolete January 1, 2011)

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams (2 records)

[View Map of All Anadromous Fish Use Streams](#)

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE *	Highest Tier **	
C69	<u>Rappahannock river I</u>	Confirmed	6		IV	<u>Yes</u>
P109	<u>Mount swamp</u>	Potential	0			<u>Yes</u>

Impediments to Fish Passage

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

are present. [View Map of Bald Eagle Concentration Areas and Roosts](#)

(1 records)

BECAR ID	Authority	Type	Comments
----------	-----------	------	----------

1	DGIF Jeff Cooper	Winter and Summer Concentration Area	Bald Eagle Concentration Areas - updated 3/11/05. Both winter and summer concentration area. Rappahannock.
---	------------------	--------------------------------------	--

Bald Eagle Nests (113 records , 113 Observations
with Threatened or Endangered
species)

[View Map of All Query Results](#)
[Bald Eagle Nests](#)

obsID	class	date_observed	Observer	N Species			View Map
				Different Species	Highest TE *	Highest Tier **	
20090562	BAEANests	Apr 27 2009	Watts and Byrd	1	FSST	II	Yes
20090612	BAEANests	Apr 27 2009	Watts and Byrd	1	FSST	II	Yes
20090662	BAEANests	Apr 27 2009	Watts and Byrd	1	FSST	II	Yes
20090672	BAEANests	Apr 27 2009	Watts and Byrd	1	FSST	II	Yes
20092892	BAEANests	Apr 27 2009	Watts and Byrd	1	FSST	II	Yes
20092731	BAEANests	Mar 7 2009	Watts and Byrd	1	FSST	II	Yes
20090461	BAEANests	Mar 7 2009	Watts and Byrd	1	FSST	II	Yes
20090501	BAEANests	Mar 7 2009	Watts and Byrd	1	FSST	II	Yes
20090551	BAEANests	Mar 7 2009	Watts and Byrd	1	FSST	II	Yes
20090561	BAEANests	Mar 7 2009	Watts and Byrd	1	FSST	II	Yes
225074	BAEANests	Apr 30 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
225078	BAEANests	Apr 30 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
225265	BAEANests	Apr 30 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
224349	BAEANests	Mar 2 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
224354	BAEANests	Mar 2 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
224588	BAEANests	Mar 2 2008	Watts and Byrd- The Center for Conservation Biology, College of William and Mary	1	FSST	II	Yes
223943	BAEANests	Apr 28 2007	Watts and Byrd	1	FSST	II	Yes
224006	BAEANests	Apr 28 2007	Watts and Byrd	1	FSST	II	Yes
224011	BAEANests	Apr 28 2007	Watts and Byrd	1	FSST	II	Yes

224016	BAEANests	Apr 28 2007	Watts and Byrd	1	FSST	II	Yes
223166	BAEANests	Mar 9 2007	Watts and Byrd	1	FSST	II	Yes
223229	BAEANests	Mar 8 2007	Watts and Byrd	1	FSST	II	Yes
223234	BAEANests	Mar 8 2007	Watts and Byrd	1	FSST	II	Yes
223239	BAEANests	Mar 8 2007	Watts and Byrd	1	FSST	II	Yes
222072	BAEANests	Apr 24 2006	Watts and Byrd	1	FSST	II	Yes
222305	BAEANests	Apr 24 2006	Watts and Byrd	1	FSST	II	Yes
222314	BAEANests	Apr 24 2006	Watts and Byrd	1	FSST	II	Yes
222328	BAEANests	Apr 24 2006	Watts and Byrd	1	FSST	II	Yes
222336	BAEANests	Apr 24 2006	Watts and Byrd	1	FSST	II	Yes
314504	BAEANests	Apr 24 2006	BRYAN D. WATTS, THE CENTE	1	FSST	II	Yes
221588	BAEANests	Mar 7 2006	Watts and Byrd	1	FSST	II	Yes
221597	BAEANests	Mar 7 2006	Watts and Byrd	1	FSST	II	Yes
221611	BAEANests	Mar 7 2006	Watts and Byrd	1	FSST	II	Yes
221619	BAEANests	Mar 7 2006	Watts and Byrd	1	FSST	II	Yes
221355	BAEANests	Mar 6 2006	Watts and Byrd	1	FSST	II	Yes
310754	BAEANests	May 15 2005	BRYAN D. WATTS, THE CENTE	1	FSST	II	Yes
310786	BAEANests	May 15 2005	BRYAN D. WATTS, THE CENTE	1	FSST	II	Yes
220381	BAEANests	Jan 1 2005		1	FSST	II	Yes
220341	BAEANests	Jan 1 2005		1	FSST	II	Yes
218378	BAEANests	Jan 1 2005		1	FSST	II	Yes
218814	BAEANests	Jan 1 2005		1	FSST	II	Yes
219812	BAEANests	Jan 1 2005		1	FSST	II	Yes
220380	BAEANests	Jan 1 2004		1	FSST	II	Yes
220379	BAEANests	Jan 1 2003		1	FSST	II	Yes
220340	BAEANests	Jan 1 2003		1	FSST	II	Yes
219811	BAEANests	Jan 1 2003		1	FSST	II	Yes
220339	BAEANests	Jan 1 2002		1	FSST	II	Yes
220378	BAEANests	Jan 1 2002		1	FSST	II	Yes
220377	BAEANests	Jan 1 2001		1	FSST	II	Yes
220338	BAEANests	Jan 1 2001		1	FSST	II	Yes
219810	BAEANests	Jan 1 2001		1	FSST	II	Yes
215771	BAEANests	Apr 27 2000		1	FSST	II	Yes
215582	BAEANests	Apr 26 2000		1	FSST	II	Yes
215721	BAEANests	Apr 26 2000		1	FSST	II	Yes
214210	BAEANests	Apr 26 2000		1	FSST	II	Yes
214257	BAEANests	Apr 26 2000		1	FSST	II	Yes
214311	BAEANests	Apr 26 2000		1	FSST	II	Yes
215770	BAEANests	Mar 4 2000		1	FSST	II	Yes
215722	BAEANests	Jan 1 2000		1	FSST	II	Yes

215581	BAEANests	Jan 1 2000		1	FSST	II	Yes
214312	BAEANests	Jan 1 2000		1	FSST	II	Yes
214258	BAEANests	Jan 1 2000		1	FSST	II	Yes
214211	BAEANests	Jan 1 2000		1	FSST	II	Yes
215768	BAEANests	May 13 1999		1	FSST	II	Yes
215720	BAEANests	May 11 1999		1	FSST	II	Yes
215580	BAEANests	May 11 1999		1	FSST	II	Yes
214209	BAEANests	May 11 1999		1	FSST	II	Yes
57086	BAEANests	May 1 1999	Mitchell A Byrd, VDGIF, B	1	FSST	II	Yes
215769	BAEANests	Mar 13 1999		1	FSST	II	Yes
215719	BAEANests	Mar 8 1999		1	FSST	II	Yes
215579	BAEANests	Mar 8 1999		1	FSST	II	Yes
214310	BAEANests	Mar 8 1999		1	FSST	II	Yes
214208	BAEANests	Mar 8 1999		1	FSST	II	Yes
214256	BAEANests	Mar 8 1999		1	FSST	II	Yes
214207	BAEANests	Apr 21 1998		1	FSST	II	Yes
215577	BAEANests	Apr 21 1998		1	FSST	II	Yes
215717	BAEANests	Apr 21 1998		1	FSST	II	Yes
54420	BAEANests	Mar 7 1998	Mitchell A Byrd, W&M, Bry	1	FSST	II	Yes
215578	BAEANests	Mar 6 1998		1	FSST	II	Yes
215718	BAEANests	Mar 1 1998		1	FSST	II	Yes
214206	BAEANests	Mar 1 1998		1	FSST	II	Yes
214205	BAEANests	Apr 21 1997		1	FSST	II	Yes
214309	BAEANests	Apr 21 1997		1	FSST	II	Yes
50330	BAEANests	Mar 1 1997	M.A. Byrd, W&M	1	FSST	II	Yes
214204	BAEANests	Feb 26 1997		1	FSST	II	Yes
214308	BAEANests	Feb 26 1997		1	FSST	II	Yes
214254	BAEANests	Apr 25 1996		1	FSST	II	Yes
214202	BAEANests	Apr 25 1996		1	FSST	II	Yes
214203	BAEANests	Mar 9 1996		1	FSST	II	Yes
214255	BAEANests	Mar 9 1996		1	FSST	II	Yes
214252	BAEANests	May 3 1995		1	FSST	II	Yes
215576	BAEANests	May 3 1995		1	FSST	II	Yes
215575	BAEANests	Mar 10 1995		1	FSST	II	Yes
214253	BAEANests	Mar 10 1995		1	FSST	II	Yes
6003	BAEANests	Mar 10 1995	M.A. Byrd, W&M, K. Cline,	1	FSST	II	Yes
214251	BAEANests	May 9 1994		1	FSST	II	Yes
215534	BAEANests	May 9 1994		1	FSST	II	Yes
215535	BAEANests	Mar 12 1994		1	FSST	II	Yes
214250	BAEANests	Mar 12 1994		1	FSST	II	Yes

219840	BAEANests	Jan 1 1993		1	FSST	II	Yes
220332	BAEANests	Jan 1 1993		1	FSST	II	Yes
219809	BAEANests	Jan 1 1992		1	FSST	II	Yes
219808	BAEANests	Jan 1 1991		1	FSST	II	Yes
219807	BAEANests	Jan 1 1990		1	FSST	II	Yes
219806	BAEANests	Jan 1 1989		1	FSST	II	Yes
219805	BAEANests	Jan 1 1988		1	FSST	II	Yes
219804	BAEANests	Jan 1 1987		1	FSST	II	Yes
214201	BAEANests	Jun 13 1986		1	FSST	II	Yes
219803	BAEANests	Jan 1 1985		1	FSST	II	Yes
214200	BAEANests	May 25 1984		1	FSST	II	Yes
214199	BAEANests	May 14 1983		1	FSST	II	Yes
214198	BAEANests	Jun 8 1982		1	FSST	II	Yes
451	BAEANests	Dec 30 1899		1	FSST	II	Yes

Displayed 113 Bald Eagle Nests

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

[View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below](#)

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus	Yes
040105		II	Rail, king	Rallus elegans	Yes

Public Holdings: (2 names)

Name	Agency	Level
Pettigrew Wildlife Management Area		
Fort AP Hill Military Reservation	U.S. Dept. of Army	Federal

Compiled on 6/22/2011, 1:31:51 PM I345282.0 report= IPA searchType= R dist= 3218
poi= 38,12,25.9 -77,15,14.9

6/22/2011 2:29:00 PM

Facility = Haymount Wastewater Treatment Plant for both 0.58 & 0.96 MGD
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 8.41
WLAc = 1.24
Q.L. = .2
samples/mo. = 12
samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average = 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.50191091583623
Average Weekly limit = 1.83000697715366
Average Monthly Limit = 1.36311600760039

The data are:

9

Units of Measurement is mg/L.

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Caroline County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2011 to 5:00 p.m. on XXX, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Haymount (Fredericksburg) ASLI LLLP, 22121 Ware Creek Road, Rappahannock Academy, VA 22538, VA0089125

NAME AND ADDRESS OF FACILITY: Haymount Wastewater Treatment Plant, Route 614, Ware Creek Road, Rappahannock Academy, VA 22538

PROJECT DESCRIPTION: Haymount (Fredericksburg) ASLI LLLP has applied for a reissuance of a permit for the private Haymount Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.96 million gallons per day into a water body. The sludge will be disposed of at BFI Old Dominion Sanitary Landfill in Henrico County, Virginia. The facility proposes to release treated sewage water in the unnamed tributary to the Rappahannock River in Caroline County in the Rappahannock River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD₅, Total Suspended Solids, Total Kjeldahl Nitrogen, Dissolved Oxygen, *E. coli* Bacteria, Total Phosphorus (calendar year) and Total Nitrogen (calendar year).

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Haymount Wastewater Treatment Plant
NPDES Permit Number:	VA0089125
Permit Writer Name:	Joan C. Crowther
Date:	September 8, 2011

Major ☐Minor ☒Industrial ☐Municipal ☒**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	x		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	x		
3. Copy of Public Notice?	x		
4. Complete Fact Sheet?	x		
5. A Priority Pollutant Screening to determine parameters of concern?	x		
6. A Reasonable Potential analysis showing calculated WQBELs?	x		
7. Dissolved Oxygen calculations?			x
8. Whole Effluent Toxicity Test summary and analysis?		x	
9. Permit Rating Sheet for new or modified industrial facilities?			x

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		x	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	x		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	x		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? Not built yet			x
5. Has there been any change in streamflow characteristics since the last permit was developed?			x
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		x	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	x		
8. Does the facility discharge to a 303(d) listed water? Discharge is upstream of 303(d) listed water.		x	
a. Has a TMDL been developed and approved by EPA for the impaired water?	x		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	x		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	x		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		x	
10. Does the permit authorize discharges of storm water?		x	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		x	
12. Are there any production-based, technology-based effluent limits in the permit?		x	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		x	
14. Are any WQBELs based on an interpretation of narrative criteria?		x	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		x	
16. Does the permit contain a compliance schedule for any limit or condition?		x	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		x	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	x		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		x	
20. Have previous permit, application, and fact sheet been examined?	x		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	x		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	x		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	x		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	x		

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	x		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?		x	
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?	x		
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	x		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	x		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		x	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			x

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	x		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	x		
3. Does the fact sheet provide effluent characteristics for each outfall?	x		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	x		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	x		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	x		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	x		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		x	
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?			x

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	x		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	x		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	x		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	x		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	x		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			x
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	x		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		x	
4. Does the permit require testing for Whole Effluent Toxicity?		x	

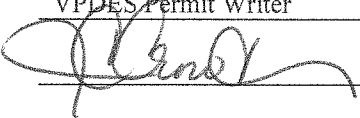
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	x		
2. Does the permit include appropriate storm water program requirements?		x	

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			x
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	x		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		x	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		x	
a. Does the permit require implementation of the “Nine Minimum Controls”?			x
b. Does the permit require development and implementation of a “Long Term Control Plan”?			x
c. Does the permit require monitoring and reporting for CSO events?			x
7. Does the permit include appropriate Pretreatment Program requirements?			x

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	x		
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	x		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Joan C. Crowther</u>
Title	<u>VPDES Permit Writer</u>
Signature	 <u></u>
Date	<u>September 9, 2011</u>